
FUTURES

FIN BOX INSTALLATION KIT



CONTENTS:

PRICE: IF SOLD SEPARATELY

1. ROUTER	\$100.00
2. ROUTER BIT	\$ 20.00
3. JIG PLATE	\$ 40.00
4. TARGET	\$ 5.00
5. COLLAR	\$ 5.00
6. X-BOX SHIM	\$ 8.00
7. ALUMINUM SPACER	\$ 2.00
8. EVA SHIMS	\$ 3.00
9. TIMMY PATTERSON TOOL	\$ 5.00

ROUTING

BASIC INSTALLATION KIT

As with any new tool, it is important that you have a good “feel” for how it operates. Gaining that valuable experience can be costly if you make learning errors on newly shaped blanks. We suggest that you use wasted and excess foam blank material to practice routing. Do practice passes repeatedly to learn how it feels and looks so the real thing won't be such a new experience.

Routing depth is very important and subject to many variations and required adjustments vis-a-vis tail shapes, thickness, contours, rockers, glass schedules, etc. It is important that the routed depth not be too great that the Future box does not reach very close to the bottom of the routed cavity. You do not want to have to flood the space at the bottom of the routed cavity with resin because foam distortion and structural degradation will result. To slightly fill a route that is too deep, use fiberglass and don't set off the resin too hot.

Remember the importance of an almost flush installation. After the Future box is set into the routed cavity, moving your finger tip around the interface between the foam and Future box flange, you should feel them to be almost level with each other. The flange should be no more than 1/32" below the level of the foam and should not be above the level of the foam.

JIG

The jig base is covered with a special gripping surface which is designed to hug the foam surface. When routing through stringers make progressively deeper passes all the way from front to back. When cutting through stringers, you should be sure to blow out all wood chips and other debris before making the final depth pass.

BOX DEPTH

You have been provided with an aluminum spacer for setting the bit's height. This spacer sets the depth so that the **flange** on the box sits **1/32" below the foam** when installed dry. It should work perfectly with a wet lamination of 4 oz. cloth and a 4 oz. patch. You may want to adjust your box depth to suit your glassing schedule. The strongest installation is one where the glass covers the entire flange up to the lip around the fin opening. If the boxes are too high, the sander will take too much glass off the flange. If the boxes are too low, there is the possibility of bubbles forming. You will need to make slight adjustments to conform to glass weight, patches, bottom configurations, radical rockers, or other variations.

TARGET

Line up your **fin placement marks** with the back cross hairs on the plastic target insert provided with the jig kit (please note: nose and tail is marked on the target). Remember the cross hairs indicate the centerline of the fin box, not the edge of the fin on the side fins, so take care to get the proper positioning (see Fig. B.) by placing the appropriate target 1/8" offset hash mark over the fin mark in order to provide for proper fin box placement and routing.

TAIL SUPPORT

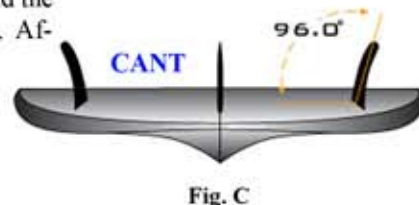
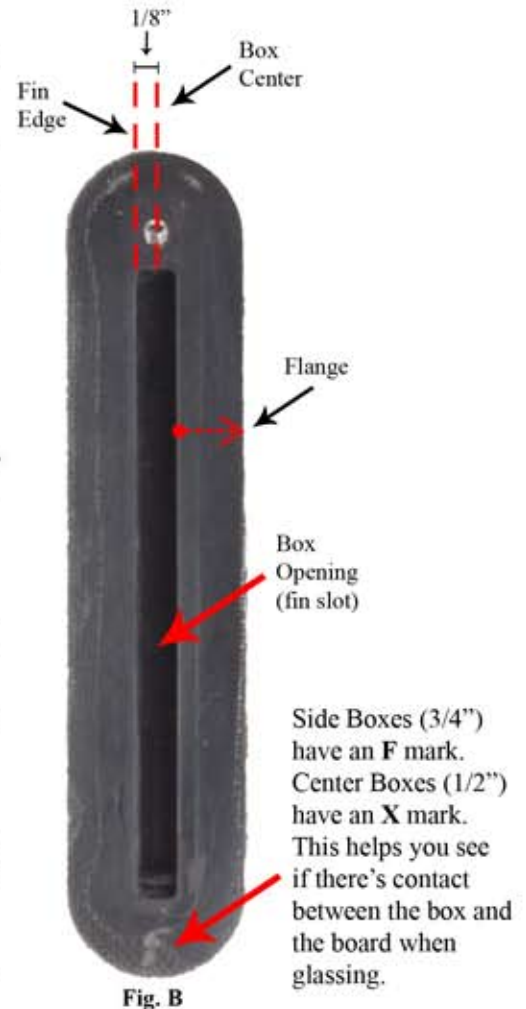
It is extremely important to **fully support the tail** of the blank during the routing process. Tail flex may radically alter the length and even the depth of the route, creating major difficulties with installation. Most problems occur with the center fin. Normal shaping racks will not properly support the back tail of the blank because they are cut out in the center. The tip of the blank just behind the back of the center box must be firmly supported.

ROUTE THROUGH

Do not panic! Box insertion in some thinner boards may result in a hole through the entire blank. Simply tape off the hole from the deck side prior to pasting in the box, glass in a normal manner. Clean up box protrusion from the deck side, grind or fill as is necessary. A small opaque logo will make a clean cover if needed.

FIN CANTS *Future side fins are all manufactured with a 6° cant.*

Although fin cants are set with the actual fin base that is inserted into the box, certain bottom configurations may make it necessary to set the fin cant at the time the box is pasted into the routed opening (see Fig. C). Gussets in the box will hold the fin angle so no tape, clips, Play Dough or other contraptions will be necessary. After the pasting resin has set, the fin is removed, box taped, and lamination proceeds as usual. Additional positive or negative fin cant adjustments can be accommodated by slight changes in the router bit attack angle. This can be accomplished by placing a long shim under the right or left side of the jig plate.



Futures Basic Fin Box Installation Jig

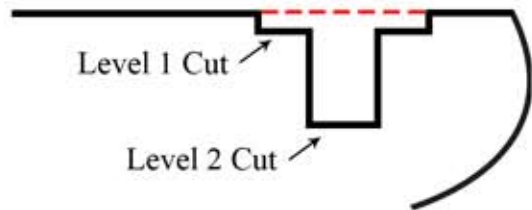
SET-UP

The Basic Installation Jig system requires that you set the router bit depth **ONCE** only. Once set, the jig system automatically resets the router to the various depths required for precise fin box installation.

The Futures fin box fits into two precisely routed cuts:

The Level 1 cut is a shallow and wide cut, which accommodates the wider fin box stabilizer flange.

The Level 2 cut is a deeper cut to the overall depth of the Futures box.



Once the router bit is set, the cuts are accomplished by matting the router into one side of the doughnut-shaped collar to make the shallower Level 1 cut and then flipping the shim over to make the deeper Level 2 cut. The doughnut shaped shim and jig plate combination automatically controls the depth and width of the cut.

By inserting the aluminum spacer over the bit's shank, it will have a standard initial (deepest) (33.5 mm) depth. After that, the shims do the rest automatically. No further resets of the router bit are necessary, however, you may want to make minor adjustments to suit your preferences.

SETTING THE BIT HEIGHT WITHOUT A SPACER

1. Place router upside down on a flat surface.
2. Loosen and allow the router-collar to drop (slide) to the end of its range (maximum cutting depth). Retighten the router-collar.
3. Place the large doughnut shaped collar onto the jig routing track with the deep side of the doughnut facing up.
4. Pick up the doughnut and place it onto the upside down router so that the deep side of the doughnut locks into place on the router.
5. Then place the jig plate on top of the doughnut so that the doughnut again rests in the jig routing track. Looking down, you will see the router bit coming through the jig cut-out on the foam side of the jig.
6. Place two fin boxes upside down on either side of the router bit jig window.
7. Bridge one of the wrenches across the router bit and fin boxes.
8. Adjust the router bit to barely touch the bottom side of the wrench bridging across it.
9. Tighten the bit at this depth position. This is the main adjustment that determines the depth of all cuts.

NEXT PAGE...SEE HOW TO SET THE BIT HEIGHT WITH THE ALUMINUM SPACER AND THE TIMMY PATTERSON TOOL.

Before using any power tools, please read the tool instructions and follow all safety rules!

Setting the bit height / Using the “Timmy Patterson Tool”



Insert the aluminum spacer over the bits shank. The concave side of the spacer needs to fit against the top of the bit flute or cutting blade, this makes for a snug fit. Now insert the bit with the spacer attached to it into the router and tighten the router-collet securely. This is the main adjustment that determines the depth of all cuts.

Checking the bit height using the “Timmy Tool”:



After the bit is inserted into the router, use the Timmy Tool to check the bit height, it should be set at 33.5 MM.

Checking the jig plate height using the “Timmy Tool”:



Use the Timmy Tool to check the Jig Plate height. Flip the Timmy Tool over and place it inside of the jig plate so that the bottom of the Timmy Tool is flush with the blank (a) and the cut out part is flush with the jig plate (b). If it is not flush, use EVA shims underneath the jig plate to make adjustments. The plate height should be at 8 MM.

Basic Production Jig: Routing Cuts for the Futures Fin Box

BEFORE USING ANY POWER TOOLS, READ THE TOOL INSTRUCTIONS, SAFETY RULES, AND WARNINGS

1. Slide the adjustable router-collar to the minimum depth cutting position (toward the end of the bit). The router-collar should be tight enough so that it can only be moved with hand pressure. The minimum depth cut position is beyond the "0" (zero) end of the depth scale on the router.



2. Use the Eva Shims to level the jig plate, a small leveler will help.

3. Line up the clear targeting tool and jig combination on the board where the fin box will be installed. Be sure the target "NOSE" end is toward the nose of the while the "TAIL" and of the target is toward the tail of the board. The textured covering on the jig bottom side will help prevent it from sliding on the board.



Side Cuts (Level 1 Cut)

4. Place the doughnut with its wide side-up on to the jig slot, it should have some side-to-side play.
5. Insert the router into the doughnut. Turn the router on and slowly plunge the router. Slowly draw the router along the tracks edge, do a full rotation.



(Level 2 Cut)

6. With the router turned off and out of the doughnut, flip the doughnut so that it does not have any side-to-side play, only up and down play. Insert the router into the doughnut. Turn the router on and slowly plunge the router while moving it back and forth. The progressively deeper cuts should be made without being too aggressive. Do a minimum of three passes to reach the final depth. Dry fit the route with a box to check route depth before moving the jig plate.

Center Cut (Level 1 Cut)

7. Repeat step 4. & 5.

(Level 2 Cut)

8. After the Level 1 Cut has been made, turn off the router and insert the clear plastic collar into the doughnut's deep side. The collar should snap into the doughnut nice and flush. Turn on the router and slowly plunge the router while moving it back and forth. The progressively deeper cuts should be made with-

out being too aggressive. Do a minimum of three passes to reach the final depth. Be careful not to damage the stringer when making cuts for the center fin box, route extra slow while doing the center cut.



Glassing Procedures



Taping

1. Before you tape the boxes, wipe all of the sides with acetone. Press the 3/8" masking tape with a tongue blade to keep air bubbles from forming, which will let resin in and ruin the box, make sure that the screw hole and the entire fin slot is covered by tape. Razor trim the ends of the raised box opening.



Gluing

- 2a. Paint the entire route with laminating resin.
FLOOD THE ROUTE.
- 2b. Paint the entire contact surface of the fin box.

Pressing

3. Press the fin box into the hole firmly, BE SURE THAT THE FLANGE SEATS COMPLETELY. The X or F mark on one end of the flange will verify contact between the box, resin, and blank.

Glassing (recommended procedures)

- 4a. Cut 3 football shape pieces of glass large enough to cover a box. Place the footballs over the boxes and pour a little resin on top of them.
- 4b. Now glass the board normally, there is no need to cut the cloth, the squeegee can pass right over the top of the boxes.
5. With protective gloves, use your finger to remove any remaining air bubbles.

Sanding

6. Grind through the glass over the lip around the box opening removing the tape at the same time. Grind down the lip as close as you can to the flange.
7. Sand the board normally with a soft pad, you can sand right over the boxes.



RULES FOR SAFE OPERATION

READ ALL INSTRUCTIONS

1. KNOW YOUR POWER TOOL. Read owners manual carefully. Learn its applications and limitations as well as the specific potential hazards related to this tool.
2. GUARD AGAINST ELECTRICAL SHOCK by preventing body contact with grounded surfaces. For example: Pipes, radiators, ranges, refrigerator enclosures.

3. KEEP GUARDS IN PLACE and in working order.
4. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
5. AVOID DANGEROUS ENVIRONMENTS. Don't use power tool in damp or wet locations or expose to rain. Keep work area well lit.
6. KEEP CHILDREN AND VISTORS AWAY. All visitors should wear safety glasses and be kept at a safe distance from work area. Do not let visitors contact tool or extension cord.
7. STORE IDLE TOOLS. When not in use, tools should be stored in a dry and high or locked up place, out of reach of children.

8. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
9. **USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy duty tool. Don't use tool for purpose not intended, Ex: A circular saw should never be used for cutting tree limbs or logs.
10. **WEAR PROPER APPAREL.** Do not wear loose clothing or jewelry that can get caught in tool's moving parts. Rubber gloves and nonskid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair and keep it from being drawn into nearby air vents.
11. **ALWAYS WEAR SAFETY GLASSES.** Everyday eyeglasses have only impact-resistant lenses: they are NOT safety glasses.
12. **PROTECT YOUR LUNGS.** Wear a face or dust mask if operation is dusty.
13. **PROTECT YOUR.** Wear hearing protection during extended periods of operation.
14. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges. Be aware of cord location at all times to avoid contact with rotating cutter. A damaged cord must be replaced by an authorized service center to avoid the hazard of operation.
15. **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
16. **DON'T OVER REACH.** Keep proper footing and balance at all times. Do not use on a ladder or with unstable support.
17. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp at all times, and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
18. **DISCONNECT TOOLS.** When not in use, before servicing, or when changing attachments, blades, bits, cutters, etc., all tools should be disconnected from power supply.
19. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
20. **AVOID ACCIDENTAL STARTING.** Don't carry plugged in tools with finger on switch.
21. **MAKE SURE YOUR EXTENSION CORD IS IN GOOD CONDITION.** When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. A wire gauge size (A.W.G.) of at least 16 is recommended for an extension cord 100 feet or less length. A cord exceeding 100 feet is not recommended. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.
22. **OUTDOOR USE EXTENSION CORDS.** When tool is used outdoors, use only extension cords suitable for use outdoors. Outdoor approved cords are marked with suffix W-A, EX: SJTW-A.
23. **KEEP CUTTERS CLEAN AND SHARP.** Sharp cutters minimize stalling and kickback.
24. **KEEP HANDS AWAY FROM CUTTING AREA.** Keep hands away from cutters. Do not reach underneath work while cutter is rotating. Do not attempt to remove material, scrap, or chips while cutter is rotating.
25. **NEVER USE IN AN EXPLOSIVE ATMOSPHERE.** Normal sparking of the motor could ignite fumes.
26. **INSPECT TOOL CORDS PERIODICALLY** and if damaged, have repaired at your nearest authorized service center. Stay constantly aware of cord location.
27. **INSPECT EXTENSION CORDS PERIODICALLY** and replace if damaged.
28. **KEEP HANDS DRY, CLEAN, AND FREE FROM OIL AND GREASE.** Always use a clean cloth when cleaning. Never use brake fluids, gasoline, petroleum-based products or any strong solvents to clean your tool.
29. **STAY ALERT.** Watch what you are doing and use common sense. Do not operate tool when you are tired. Do not rush.
30. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard, or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged must be properly repaired or replaced by an authorized service center unless indicated elsewhere in this instruction manual.
31. **DO NOT USE TOOL IF SWITCH DOES NOT TURN IT ON AND OFF.** Have switches replaced by an authorized service center.
32. **INSPECT FOR** and remove all nails from lumber before trimming.
33. **DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drugs, alcohol, or any medication.
34. **WHEN SERVICING USE ONLY IDENTICAL RYOBI REPLACEMENT PARTS.**
35. **POLARIZED PLUGS.** To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in anyway.
36. **DO NOT USE TOOL UNDER "BROWN OUT" OR OTHER LOW VOLTAGE CONDITIONS.** Also, do not use with any device that could cause the power supply voltage to change.